



# Floats Module

The vast Southern Ocean, which surrounds Antarctica, plays a starring role in the future of climate change. The global oceans together absorb 90% of the excess heat in the climate system, and three quarters of that heat uptake occurs in the Southern Ocean. Of all the anthropogenic carbon dioxide absorbed by the oceans, the Southern Ocean alone accounts for about half of it.

Despite its intrinsic role in the global climate, this particular ocean has gone almost completely unobserved. Scientists have struggled to gather precise measurements on the deep waters because of its harsh environment and extreme remoteness. It's clear to scientists that the dynamics of the Southern Ocean determine key aspects of our climate, including how sensitive the Earth will be to further increases in carbon and heating, and as a result, in situ observations and predictive models will reveal how the climate will react to further changes.

Building and deploying these new biogeochemical floats are the first steps toward painting an accurate picture of the Southern Ocean. But how do they work?

Scientists at Monterey Bay Aquarium Research Institute (MBARI) and the University of Washington (UW) have been collaborating in designing and building the floats and the sensors. Before deploying the floats in the Southern Ocean, the scientists submerge the floats in test tank at MBARI and send them out for a test deployment deep in the Monterey Bay Canyon. If the floats pass the test, they're sent out to sea!

## **Videos**

[Testing Floats in Monterey Bay](#)  
[Google Hangout: The Float Decoder](#)

## **Animation**

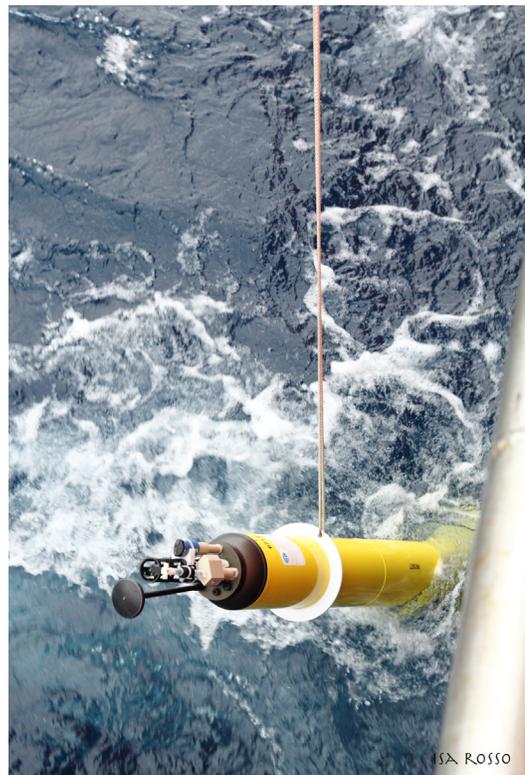
[Day in the Life of a SOCCOM Float](#)

## **Handouts**

[SOCCOM Data Visualization Guide](#)  
[What is a Float?](#)

## **Student Scientist Blogs**

[Hannah Zanowski aboard the R/V Polarstern](#)  
[Veronica Tamsitt aboard the R/V Palmer](#)  
[Isa Rosso aboard the R/V Investigator](#)  
[Earle Wilson aboard the R/V I08S](#)



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